

AMENDMENTS TO THE CLAIMS

This is a complete and current listing of the claims, marked with status identifiers in parentheses. The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A computer-readable recording medium ~~including recorded data~~, comprising:

an information area, the information area including a first region for ~~the recorded~~ a main data, and a second region for ~~optional~~ control information which ~~when present~~, controls recording or reproduction of the ~~recorded~~ main data, ~~and a third region for information identifying the presence or absence of the optional information;~~
said ~~optional~~ control information ~~and/or said information identifying the presence or absence of said optional information being encoded in wobbled pits pattern,~~
wherein said control information is recorded by bi-phase modulation method in such a manner that bit 0 and bit 1 are determined respectively depending on a transition in a direction within a predetermined period.

2. (Currently Amended) The recording medium according to claim 1, wherein said control information ~~identifying the presence or absence of the optional information~~ is recorded in a lead-in zone of the information area of the recording medium.

3. (Cancelled)

4. (Currently Amended) The recording medium according to claim ~~1~~ 2, wherein said control

~~information identifying the presence or absence of the optional information is recorded in a permanent information & control (PIC) data area of the information area of the recording medium~~ the lead-in zone defined in Blu-ray Disc (BD).

5. (Currently Amended) The recording medium according to claim ~~4~~ 4, wherein ~~said optional information and said information identifying the presence or absence of the optional information are recorded in a permanent information & control (PIC) data area of the information area of the recording medium~~ the bit 0 is represented by the transition from low to high, while the bit 1 is represented by the transition from high to low.

6. (Currently Amended) The recording medium according to claim 1, wherein ~~said optional control information and said information identifying the presence or absence of the optional information are~~ is recorded in a permanent information & control (PIC) data area of the information area of the recording medium defined in Blu-ray Disc (BD) as part of disc information or independent of the disc information.

7-13. (Cancelled)

14. (Currently Amended) The recording medium according to claim 1, wherein the information area further includes a third region for storing identification information to identify the presence or absence of the control information, said identification information identifying the presence or absence of said optional information ~~is encoded in wobbled pits pattern~~ by bi-phase modulation.

15. (Currently Amended) A method of forming a recording medium, comprising:
- forming a first region for storing ~~recorded~~ a main data;
 - forming a second region for ~~optional~~ control information which ~~when present~~, controls recording or reproduction of the ~~recorded~~ main data; and
 - ~~forming a third region for information identifying the presence or absence of the optional information; and~~
 - encoding the ~~optional~~ control information and/or the information identifying the presence or absence of the ~~optional~~ information in wobbled pits pattern,
 - wherein said control information is encoded by bi-phase modulation method in such a manner that bit 0 and bit 1 are determined respectively depending on a transition in a direction within a predetermined period.
16. (Currently Amended) The method according to claim 15, wherein said ~~third~~ second region for said control information ~~identifying the presence or absence of the optional information~~ is in a lead-in zone of the information area of the recording medium.
17. (Cancelled)
18. (Currently Amended) The method according to claim ~~15~~ 16, wherein said ~~third~~ second region for said identification information identifying the presence or absence of the ~~optional~~ control information is in a permanent information & control (PIC) data area of the information area ~~of the recording medium~~ defined in Blu-ray Disc (BD).

19. (Currently Amended) The method according to claim ~~15~~18, wherein the bit 0 is represented by the transition from low to high, while the bit 1 is represented by the transition from high to low~~said second region for said optional information and said third region for said information identifying the presence or absence of the optional information are in a permanent information & control (PIC) data area of the information area of the recording medium.~~

20. (Currently Amended) The method according to claim 15, wherein said second region for said ~~optional~~control information and ~~said third region for said information identifying the presence or absence of the optional information are~~ is in a permanent information & control (PIC) data area of the information area ~~of the recording medium~~defined in Blu-ray Disc (BD) as part of disc information or independent of the disc information.

21-27. (Cancelled)

28. (Currently Amended) The method according to claim 15, further comprising:
forming a third region for identification information to identify the presence or absence of the control information,

wherein said identification information ~~identifying the presence or absence of said optional information~~ is encoded in wobbled pits~~pattern~~ by bi-phase modulation.

29. (Currently Amended) A method of reproducing data from a recording medium, comprising:

utilizing optional control information which ~~when present, controls recording or~~
~~reproduction of the recorded a main data, and/or information identifying the presence or absence~~
~~of the optional information, to reproduce the data;~~
the optional control information and/or the information identifying the presence or absence of the
~~optional information being encoded in wobbled pits pattern, said control information being~~
encoded by bi-phase modulation method in such a manner that bit 0 and bit 1 are determined
respectively depending on a transition in a direction within a predetermined period,
wherein the utilizing step includes a step of decoding the control information by a demodulation
method.

30. (Currently Amended) The method according to claim 29, wherein said control
~~information identifying the presence or absence of the optional information~~ is recorded in a lead-
in zone of the information area of the recording medium, and
wherein the utilizing step includes a step of reading the control information in the lead-in
zone.

31. (Cancelled)

32. (Currently Amended) The method according to claim ~~29~~30, wherein said control
~~information identifying the presence or absence of the optional information~~ is recorded in a
permanent information & control (PIC) data area of ~~the information area of the recording~~
~~medium~~the lead-in zone defined in Blu-ray Disc (BD), and
wherein the reading step reads the control information in the PIC data area.

33. (Currently Amended) The method according to claim ~~29~~32, wherein the bit 0 is represented by the transition from low to high, while the bit 1 is represented by the transition from high to low~~said optional information and said information identifying the presence or absence of the optional information are recorded in a permanent information & control (PIC) data area of the information area of the recording medium, and~~
wherein the decoding step decodes the bit 0 or 1 by identifying the transition direction.

34. (Currently Amended) The method according to claim 29, wherein ~~said optional~~control information and ~~said information identifying the presence or absence of the optional information~~ are~~is~~ recorded in a permanent information & control (PIC) data area ~~of the information area of the recording medium~~defined in Blu-ray Disc (BD) as part of disc information or independent of the disc information, and
wherein the utilizing step includes a step of reading the control information as part of disc information or independent of the disc information.

35-41. (Cancelled)

42. (Currently Amended) The method according to claim 29, wherein the utilizing step includes a step of utilizing identification information to identify the presence or absence of the control information, said identification information identifying the presence or absence of said optional information is being encoded in wobbled pits~~pattern~~ by bi-phase modulation.

43-56. (Cancelled)

57. (Currently Amended) An apparatus for reproducing data from a recording medium, ~~said apparatus comprising:~~

a signal detector to detect utilizing optional control information which when present,
controls recording or reproduction of the recorded a main data, and/or information identifying the
presence or absence of the optional information, to reproduce the data, the optional control
information and/or the information identifying the presence or absence of the optional
information being encoded in wobbled pits pattern, said control information being encoded by bi-
phase modulation method in such a manner that bit 0 and bit 1 are determined respectively
depending on a transition in a direction within a predetermined period; and

a signal processor, coupled to the signal detector, to decode the control information by a
demodulation method.

58. (Currently Amended) The apparatus according to claim 57, wherein said control
information identifying the presence or absence of the optional information is recorded in a lead-
in zone of the information area of the recording medium medium, and

wherein the signal detector detects the control information in the lead-in zone.

59. (Cancelled)

60. (Currently Amended) The apparatus according to claim ~~57~~58, wherein said control
information identifying the presence or absence of the optional information is recorded in a

permanent information & control (PIC) data area ~~of the information area of the recording medium~~ defined in Blu-ray Disc (BD), and

wherein the signal detector detects the control information in the PIC data area.

61. (Currently Amended) The apparatus according to claim ~~57~~60, ~~wherein said optional information and said information identifying the presence or absence of the optional information are recorded in a permanent information & control (PIC) data area of the information area of the recording medium~~ the bit 0 is represented by the transition from low to high, while the bit 1 is represented by the transition from high to low, and

wherein the signal processor decodes the bit 0 or 1 by identifying the transition direction.

62. (Currently Amended) The apparatus according to claim 57, wherein said ~~optional~~control information and said information identifying the presence or absence of the optional information ~~are~~is recorded in a permanent information & control (PIC) data area ~~of the information area of the recording medium~~ defined in BD(Blu-ray Disc) as part of disc information or independent of the disc information,

wherein the signal detector detects the control information as part of disc information or independent of the disc information.

63-69. (Cancelled)

70. (Currently Amended) The apparatus according to claim 57, wherein the signal processor identifies the presence or absence of the control information based on identification information, said identification information ~~identifying the presence or absence of said optional information is~~

being encoded in wobbled ~~pit~~pattern by bi-phase modulation.